

FIG. 1

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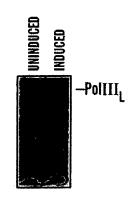


FIG. 2A

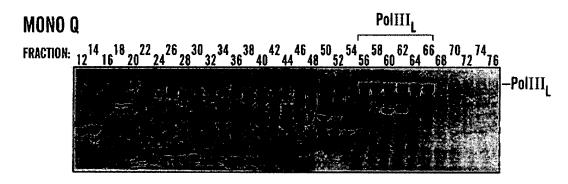
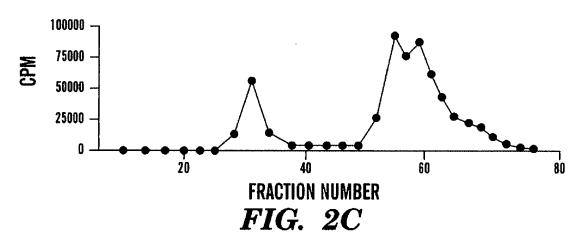


FIG. 2B



#### **PHOSPHOCELLULOSE**

FRACTION: 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40

-PolIII<sub>L</sub>

FIG. 2D

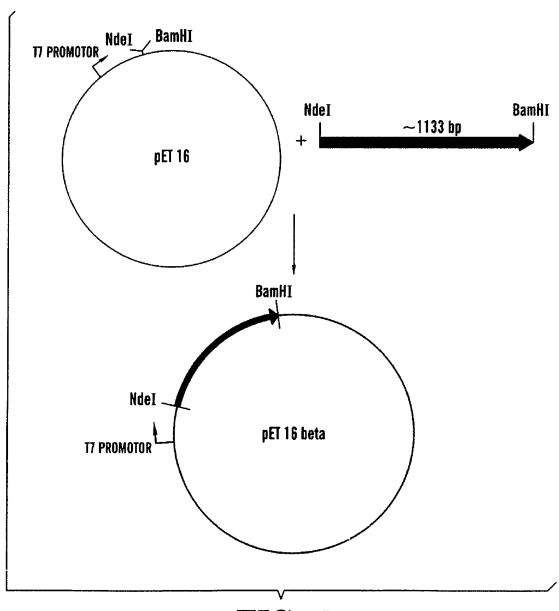
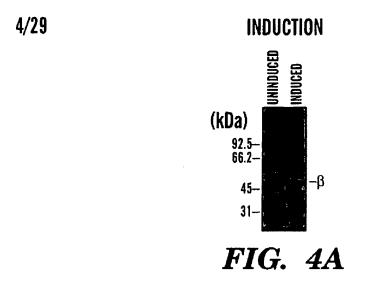


FIG. 3



#### NICKEL COLUMN

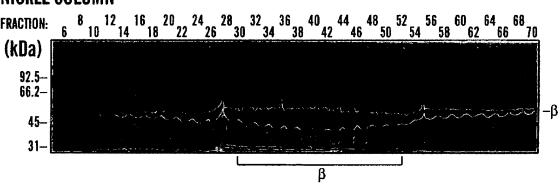


FIG. 4B

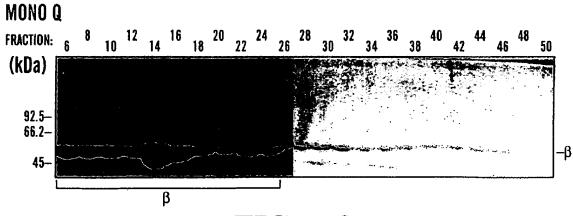


FIG. 4C

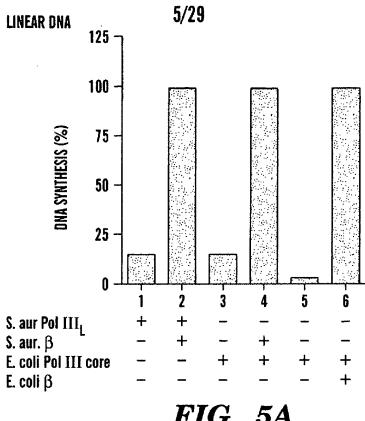
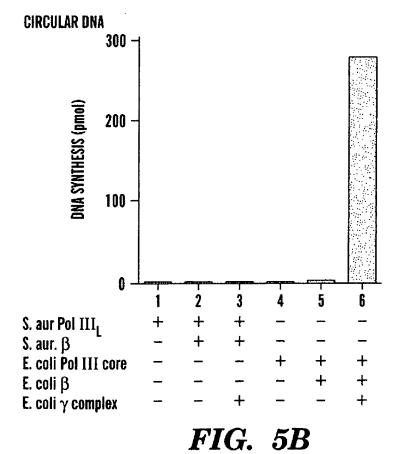
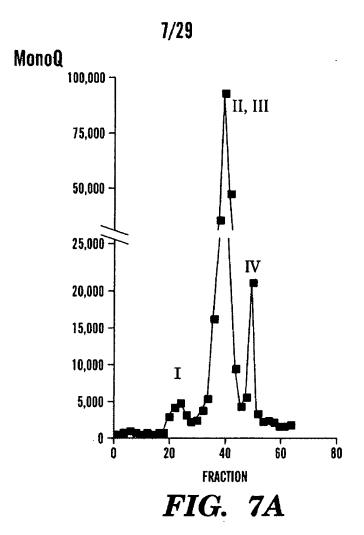


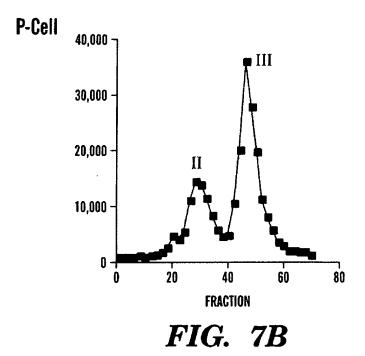
FIG. 5A



	1	2	3	4		5	6	RFII
							1. A	-ssDNA
S. aur Pol III <sub>1</sub>	+	+	_	+	-	-	-	
S. aur β	+	+	_	_	4	-	_	
E. coli Pol III CORE	_	_	-	-	4	-	+	
E. coli β			+	+	_	-	+	
E. coli $\gamma$ COMPLEX	-	+	+	+	4	-	+	
DNA SYNTHESIS (pmoi)	4.5	5.5	3.9	58	4.	4	109	

FIG. 6





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## AGAROSE GEL

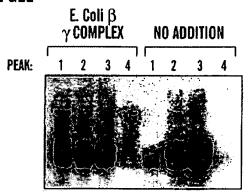


FIG. 8A

### **DNA SYNTHESIS**

	DNA SYNTHESIS (PMOI) Peak				
ADDITION	PEAK 1	PEAK 2	PEAK 3	PEAK 4	
NONE	22.7	70.6	146.1	4.7	_
E coli $\beta$ , $\gamma$ COMPLEX	72.9	61.2	71.4	25.9	

FIG. 8B

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KIWRATCIWNCDFRSSACKAVAKDVGRIMGFDEVTLNEISSLIPHKLGITLDEAYQID-D MYGRDAVSQIITFGTMAAKAVIRDVGRVLGHPYGFVDRISKLIPPDPGMTLAKAFEAEPQ MYGRDAVSQIITFGTMAAKAVIRDVGRVLGHPYGFVDRISKLVPPDPGMTLAKAFEAEPQ	FKKFVHRNHRHORWFSICKKLEGLPRHTSTHAAGILINDHPLYEYAPLTKGDTGLLTQ LPEIYEADEEVKALIDMARKLEGVTRNAGKHAGGVVIAPTKITDFAPLYCDEEGKHPVTQ LPEIYEADEEVRALIDMARKLEGVTRNAGKHAGGVVIAPTKITDFAPLYCDEEGKHPVTQ	WTWTEAERIGILKIDFLGLRNLSIIHQILTRVEKDLGFNIDIEKIPFDDOKVFELL FDKSDVEYAGLVKFDFLGLRTLTIINWALEMINKRRAKNGEPPLDIAAIPLDDKKSFDML FDKSDVEYAGLVKFDFLGLRTLTIINWALEMINKRRAKNGEPPLDIAAIPLDDKKSFDML	SQGDTTGIFQLESDGVRSVLKKLKPEHFEDIVAVTSLYRPGPMEEIPTYITRHDPS- QRSETTAVFQLESRGMKDLIKRLQPDCFEDMIALVALFRPGPLQSGMVDNFIDRKHGREE QRSETTAVFQLESRGMKDLIKRLQPDCFEDMIALVALFRPGPLQSGMVDNFIDRKHGREE	KVQYLHPHLEPILKNTYGVIIYQEQIMQIASTFANFSYGEADILRRAMSKKNRAVL ISYPDVQWQHESLKPVLEPTYGIILYQEQVMQIAQVLSGYTLGGADMLRRAMGKKKPEEM LSYPDVQWQHESLKPVLEPTYGIILYQEQVMQIAQVLSGYTLGGADMLRRAMGKKKPEEM ** * * * * * * * * * * * * * * * * * *	ERDAQHFIEGTKQNGYHEDISKQIFDLIAKQRSVPAEGAEKNGINAELAMKIFDLVEKFAGYGFNKSHSAAYALVSYQTLWLKAHYPA AKQRSVFEEGAKKNGIDGELAMKIFDLVEKFAGYGFNKSHSAAYALVSYQTLWLKAHYPA * ** **
S.aureus	S.aureus	S.aureus	S.aureus	S.aureus	S.aureus
E.coli	E.coli	E.coli	E.coli	E.coli	E.coli
Sal.typ	Sal.typ	Sal.typ	Sal.typ	Sal.typ	Sal.typ

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SIAKVFAKAINCLNSTDGEPCNECHICKGITQGTNSDVIEIDAASNNGVDEIRNIRDKVKYA SAAKIFAKAVNCEHAPVDEPCNECAACKGITNGSISDVIEIDAASNNGVDEIRDIRDKVKFA ----SHAYLFSGPRGTGKT SIARLLAKGLNCETGITATPCGVCDNCREIEQGRFVDLIEIDAASRTKVEDTRDLLDNVQYA ATP site PSESKYKVYIIDEVHMLTTGAFNALLKTLEEPPAHAIFILATTEPHKIPPTIISRA PSAVTYKVYIIDEVHMLSIGAFNALLKTLEEPPEHCIFILATTEPHKIPLTIISRC PARGRFKVYLIDEVHMLSRHSFNALLKTLEEPPEHVKFLLATTDPQKLPVTILSRC \*\* \*\* \* \* \* \* \* \* \* \* \* \*\*\*\*\*\* MKGYCLWRCNLDYQALFVVPTP-KFEDVVGQEHSEDCAMG--\* \*\*\*\*\*\*\*\* Zn++ finger \*\*\* \*\*\* \*\*\* S.aureus B.sub E.coli S.aureus S.aureus B. sub E. coli B.sub. E.coli

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ALNIANKLERMKIYLAVGIFSLEMGADQLITRMICSSGNVDSNRLRTGTMTEEDWSRFTI ALNIAQNVA-TKTDFSVAIFSLFMGAEQLVMRMLCAEGNINAQNLRTGNLTEEDWGKLTM AMNLVENAA-MLQDKPVLIFSLEMPSEQIMMRSLASLSRVDQTKIRTGQLDDEDWARISG AMNLCENAA-MLQDKPVLIFSLEMPGEQIMMRMLASLSRVDQTRIRTGQLDDEDWARISG * * * * * * * * * * * * * * * * * * *	AVGKLS-RTKIFIDDTPGIPINDLRSKCRRLKQEHG-LYVIVIDYLQLIPGVGSRASDNR AMGSLS-NSGIYIDDIPGIRVSEIRAKCRRLKQESG-LGMILIDYLQLIQGSG-RSKDNR TWGILLEKRNIYIDDSSGLTPTEVRSRARRIAREHGGIGLIMIDYLQLMRVPALSDNR TWGILLEKRNMYIDDSSGLTPTEVRSRARRIFREHGGLSLIMIDYLQLMRVPSLSDNR ************************************	QQEVSEISRTLKALARELECPVIADSQLSPALPPRRATRPDLPRH
S.aureus	S.aureus	S.aureus
B.sub	B.sub	B.sub
E.coli	E.coli	E.coli
Sal.typ	Sal.typ	Sal.typ

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B.sub.yqeN E.c.delta	MYFDVWKSLKKGE-VHPVYCLYGKETYLLGETVBRIRGTVVDQETRDPNLSVFDLEED MIRLYPEGLRAGINEGLRAAYLLLGNDPLLLGESQDAVRQVAAAQGFEEHHTFSIDPNTD *: :.*: .* :: * *::. ****: . :** * :!.: ! * !	59
B.s.yqaN E.c.delta	PLDQAIADAETFPFMGERRLVIVMPYFLTGEKKKEKIEHHVSALESYIQSPAPYTVFVL -WHAIFSLCQAMSLFASRQTLLLLLPENGPHAAINEQLLTLTGLHDDILLIVR : :: .:::::: * .* : *!.:::* . ::. ::*	117
B.s.yqeN E.c.delta	Lapyeklderkkltkalkkhafischakelhakettdftvnlakteoktigteaaehlvll Gnklskagenaavftalanksvqvtcqtpeqaqlprwvaarakqlnlelddaanqvlcyc .*!***!!!!!!!!!!!!!!!!!!!!!!!!!!!!	125
B.s.yqeN E.c.delta	VNGHLSSIFQEIQKLCTFIGDREEITLDDVKMLVARSLEQNIFELINKIVNRKRTESLQI YEGNLLALAQALERLSLLWPDGK-LTLPRVEQAVMDAAHFTPFHWVDALLMGKSKRALHI !*!* :	235
B.s.yqeN E.c.delta	FYDLLKQHEEPIKIMALISHQFRLILQTKYFAEQGYGQKQIASHLKVHPFRVKLAHDQAR LQQLRLEGSEPVILLRTLQRELLLLVNLKRQSAHTPLR-ALFDKHRVWQNRRGMGHALN : : * :**: :: * : : : : : * : : : . : : * : :	291
B.s.yqab E.c.delta	LFSEELRLIIEQLAVMDYEMKTGKKDKQLLLELFLLQLLKRMEKNDPHY RLSQTQLRQAVQLLTRTELTLKQDYGQSVWAELEGLSLLLCHKPLADVFIDG	343

# FIG. 12A

B.s.yqeN S.p. delta	-nvydvwkslkkgevhyvyclygketyllqetvsrir-qtvvdqetkdfmlsvydleedp miaiekieklskemiglitlvtgddigqysqlksrlmeqiaydkddlaysyydmseaa	59
	1.11 1.4.4 11 1 1 4.1 441 4 41 41 4 441.4 .	
Baub.yqeN	LDQAIADAETFPFMGERRLVIVKHPYFLTGEKKKEKIEHEVSALESYIQSPAPYTVFVLL	117
S.p.delta	YQDAEMDLVSLPFFAEQKVVIFDHILDITTNKKSFLKEKDLKAFEAYLENPLETTRLIIF	
Bsub.yqeN	Apyerlderekltkalkkhaphmeakelhakettdftvhlakteoktioteaaehlvllv	125
8.p.delta	AP-GKLDSKRRLVKLLKRDALVLEANPLKEAELRTYPQKYSHQLGLGFFSGAFDQLLL	
Baub, your	MGHLSSIFQEIQKLCTFIGDREEITLDDVKMLVARSLEQNIFELIKKIVHRKRTESL	235
S.p.delta	KSNDDFSQIMRNMAFLKAYKKTONISLTDIRQAIPKSLQDNIFD-VTRLVLRGKIDAA	
Bsub.ygeN	Q-ifydllaqheepikinalisnqfrlilqtkypaeqqygqaqanlkyhpfr	291
S.p.delta	RDLIHDLRLSGEDDIKLIAINLGGFKLFLGLTILARDVKNEGGLVISLSDILGRRVNFYG	
Baub.yqeN	VKLAMDQARLFSEEELRLIIEQLAVMDYEMKTGRKDKQLLLELFLLQLLKRMEKNDPHY	343
S.p.delta	VKYALKDSRTLSLAFLTGAVKTLIETDYQIKTGLYEKSYLVDIALLKIMTHSQK	343

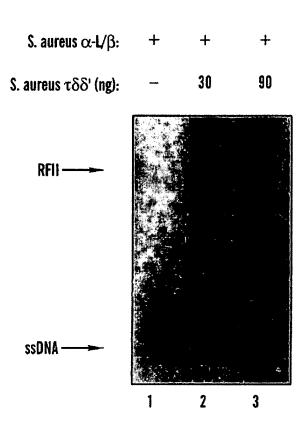


FIG. 13

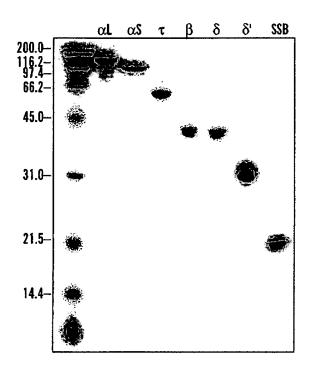


FIG. 14

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SUPEROSE 6

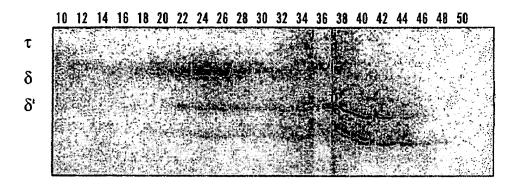


FIG. 15A

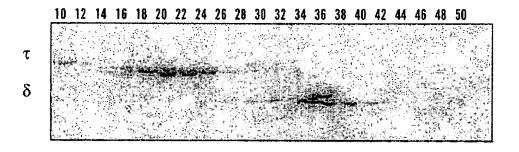


FIG. 15B

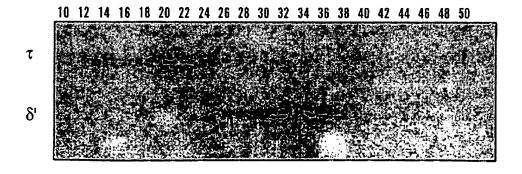


FIG. 15C

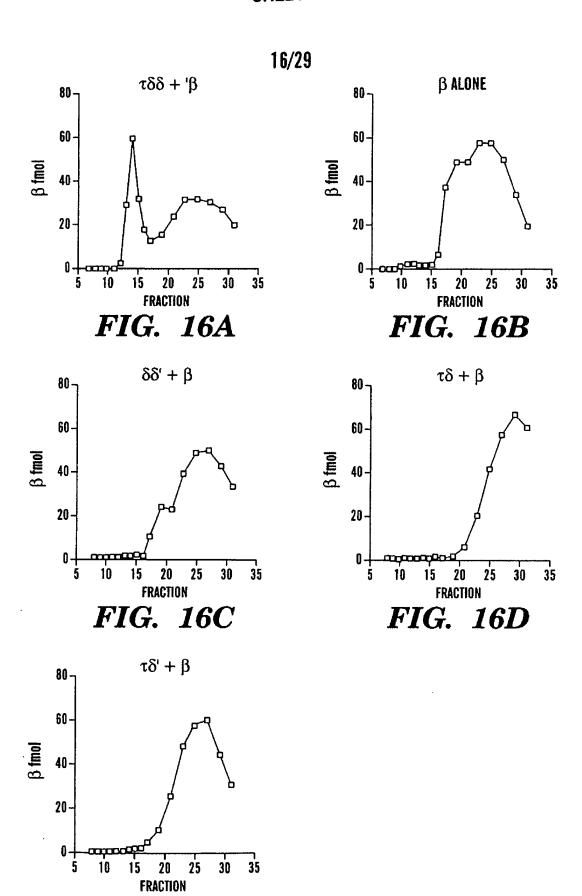


FIG. 16E

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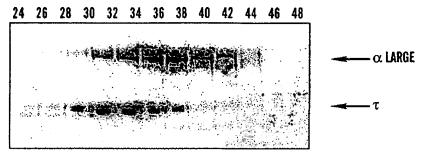


FIG. 17A

24 26 28 30 32 34 36 38 40 42 44 46 48



FIG. 17B

24 26 28 30 32 34 36 38 40 42 44 46 48

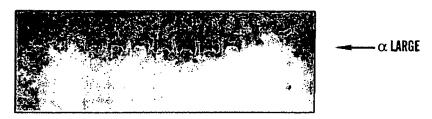


FIG. 17C

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SUPEROSE 6

6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50

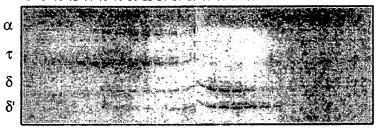


FIG. 18

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 $\alpha$ Lτδδ" +  $\beta$ /DNA

3:1

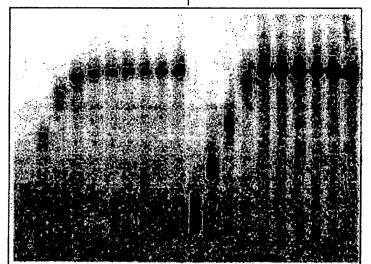
10:1

RFII

SS

TIME (SEC)

2 4 6 8 10 12 14 16 18 20 2 4 6 8 10 12 14 16 18 20



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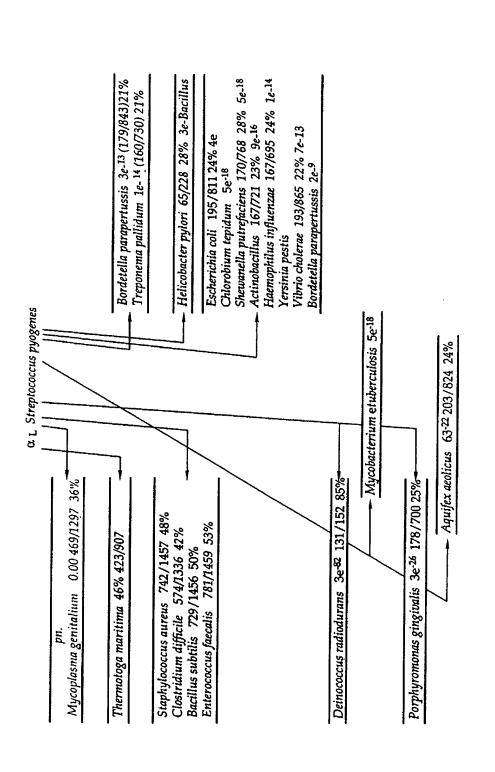


FIG. 20A

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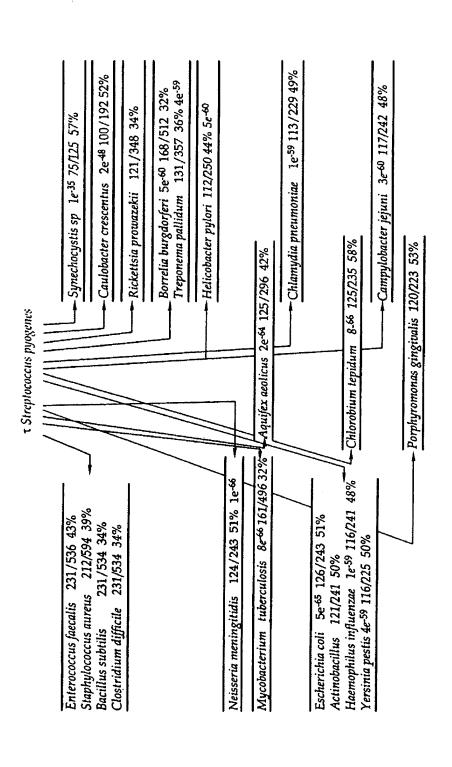


FIG. 20B

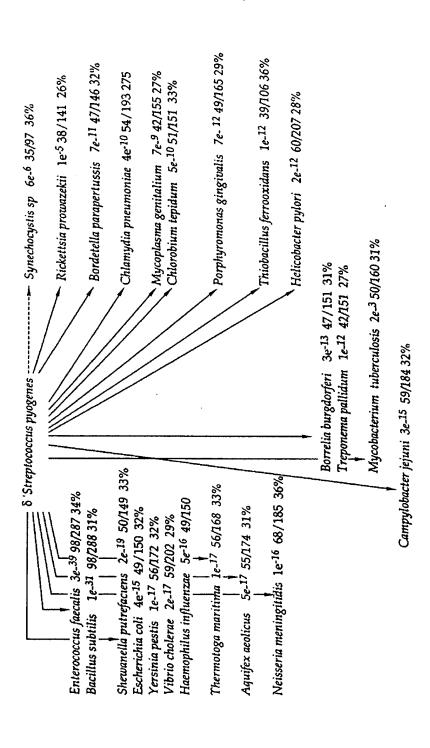


FIG. 20C

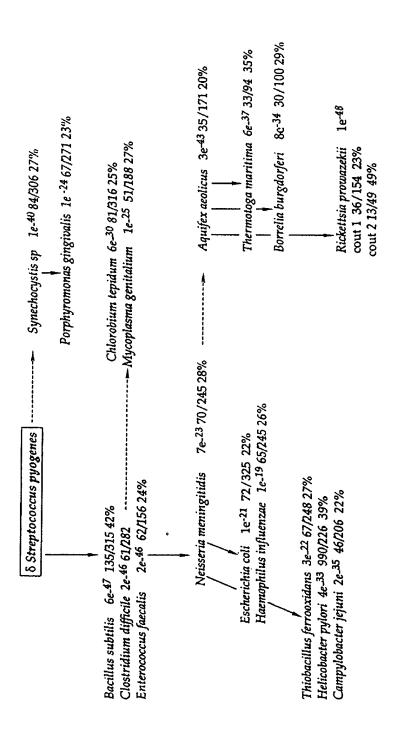


FIG. 20D

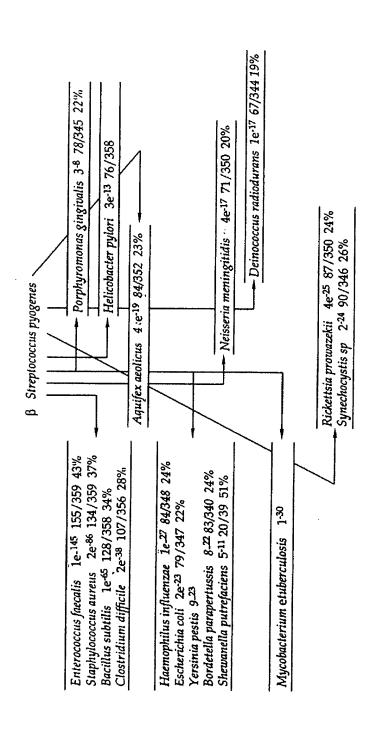


FIG. 20E

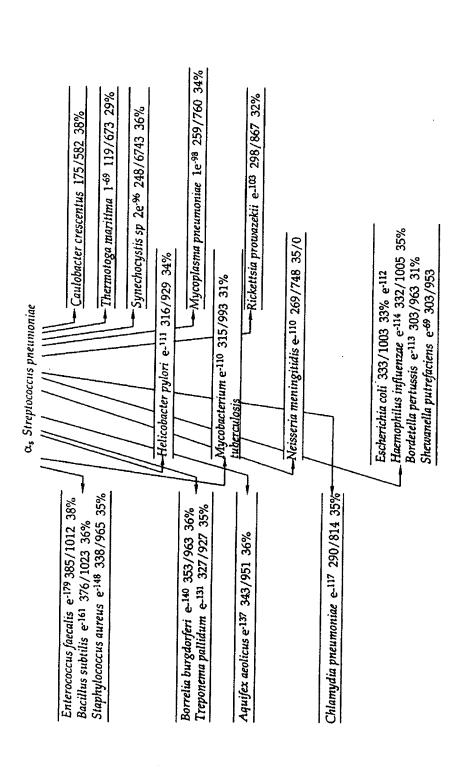


FIG. 20F

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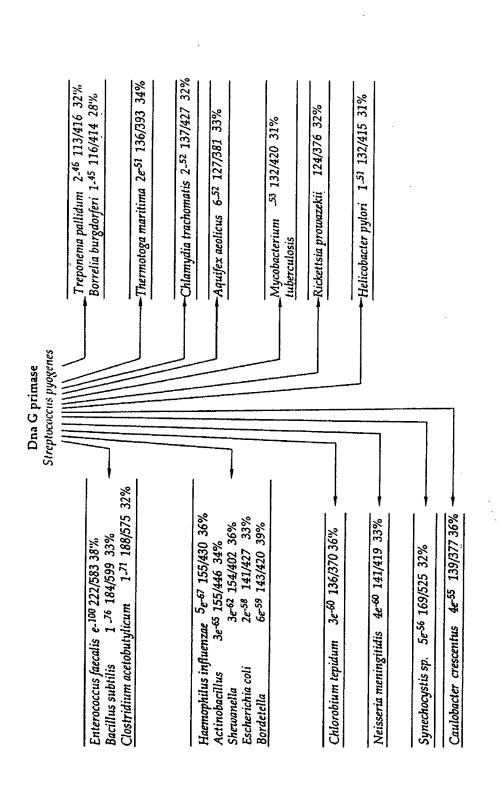


FIG. 20G

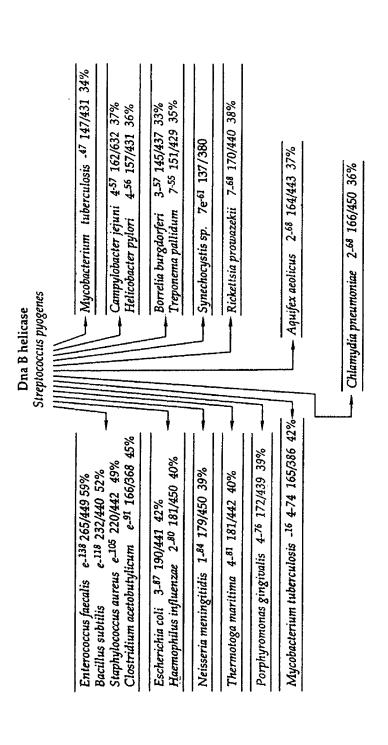


FIG. 20H

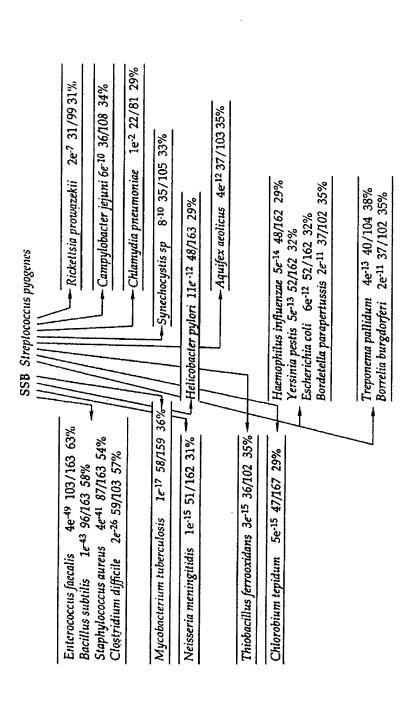


FIG. 201

